

Message

---

**From:** Jones, Jim [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C32C4B9347004778B0A93A4CBD83FC8A-JJONES1]  
**Sent:** 12/3/2014 8:48:21 PM  
**To:** Kadel, Lek [Kadel.Lek@epa.gov]  
**CC:** Stanislaus, Mathy [Stanislaus.Mathy@epa.gov]  
**Subject:** FW: NBC: Is Rubber Mulch a Safe Surface for Your Child's Playground?

Lek, I think ORD and OCSPP should get together to map out a strategy going forward. It would be good to get together with the leadership in ORD as well as the key players in the 2008 study to begin to develop a game plan. If you agree, let me know who to invite and I'll schedule.

Mathy, are there some key players in OSWER who should be involved as well?

Thanks

Jim Jones  
Assistant Administrator  
Office of Chemical Safety and Pollution Prevention  
US EPA  
202 564-0342

---

**From:** Reynolds, Thomas  
**Sent:** Wednesday, December 03, 2014 3:42 PM  
**To:** Jones, Jim  
**Subject:** FW: NBC: Is Rubber Mulch a Safe Surface for Your Child's Playground?

---

**From:** Purchia, Liz  
**Sent:** Tuesday, December 02, 2014 6:12 PM  
**To:** Reynolds, Thomas; Allen, Laura  
**Subject:** NBC: Is Rubber Mulch a Safe Surface for Your Child's Playground?

Here's the story. EPA sections are highlighted.

## Is Rubber Mulch a Safe Surface for Your Child's Playground?

BY HANNAH RAPPLEYE, STEPHANIE GOSK, KEVIN MONAHAN AND MONICA ALBA

<http://www.nbcnews.com/news/investigations/rubber-mulch-safe-surface-your-childs-playground-n258586>

The public playground in Bandon, a small town on the blustery coast of Oregon, has everything a kid could want. Swings and an orange, twisting slide, even a bright blue boat.

But after the playground was installed in 2009, some mothers became concerned about the springy black stuff beneath their children's feet. In addition to the new equipment, the playground was outfitted with the latest in safety surfacing: a pool of shredded rubber from old tires, also known as "rubber mulch," which can cushion kids' falls better than gravel or wood chips.

Vanesza Farmer said she struggled to keep her daughter -- who was learning to walk at the time -- from putting tire crumbs in her mouth. "My kids would just be tainted in black," she said. "Their clothes would be black. And I just knew, this isn't healthy."

### **Watch "Nightly News" Tonight for Stephanie Gosk's Report on Rubber Mulch**

Farmer and a handful of other parents started to research rubber infill, the recycled crumbs and shreds of old tire that in various forms have become an increasingly popular option for cities, schools, and day cares looking for a safe play surface for kids. What they found, they said, launched them on a campaign to replace the rubber.

"We know that there are chemicals in tires, and we know that they are most likely not removed just by shredding and putting them on a playground," said Bandon resident Shayla DeBerry-Osborne, who has four children under the age of 6. "I feel that if we know about these potential risks to our children, it's our responsibility as parents to limit the risk."

The U.S. government, however, is sending parents like those in Bandon mixed messages about rubber mulch.

The rubber mulch in Bandon is made of the same recycled tire rubber that is used as infill in crumb rubber artificial turf. A previous NBC News investigation raised questions about the safety of crumb rubber turf, which has been rolled out in thousands of U.S. parks, soccer fields and stadiums. More than two dozen studies have attempted to measure the potential health risks of crumb rubber surfaces. While many have found no negative health effects, some doctors and toxicologists believe these studies are limited and insufficient to establish conclusively that shredded rubber surfaces are safe.

[Click Here to Read the Original NBC News Investigation](#)

The difference between rubber mulch and crumb rubber artificial turf is that the federal government actively promotes the use of mulch -- despite conflicting signals from the agencies charged with protecting children's health and ensuring consumer product safety. The Environmental Protection Agency acknowledges that more studies of crumb rubber need to be done, and has retracted an earlier assurance that crumb rubber turf is safe. Both the EPA and the Consumer Product Safety Commission, however, recommend and promote rubber mulch. The EPA has worked with industry representatives and state officials to increase the use of tire mulch in playgrounds, and the CPSC recommends mulch in the "Bible" it provides to playground planners across the country.

Proponents of rubber mulch say it protects kids from injuries, and that studies have proved crumb rubber to be safe. Made of fragments that can be peppercorn-sized or as big as pine mulch, the product is now showing up at day care centers, schools, even the playground at the White House.

### **Share Your Synthetic Turf Stories with Us**

But as rubber infill moves from the soccer field to the playground, some are asking whether that same rubber presents a greater threat to young children, whose organs, muscles and nervous systems are still developing.

"Children go to playgrounds almost daily," said Dr. Philip Landrigan, dean of global health at New York's Mt. Sinai Hospital and a top expert on the effect of chemicals on children. "And gifted athletes are on the soccer field almost every day. That sort of cumulative exposure results in a buildup in their body of these toxic chemicals, and can result in a buildup of cellular damage that's caused by these chemicals, that can then result in disease years or decades later."

"Little children should not be put in a situation where they're forced to be in intimate contact with carcinogenic chemicals," Dr. Landrigan added.

### **"It Was the Safest Thing for a Kid to Fall Onto"**

Since the 1970s, advances in playground safety have focused on improving the impact attenuation of surfacing -- or how much impact a surface can absorb -- and the safety of play equipment. According to the Centers for Disease Control and Prevention, emergency rooms treat over 200,000 kids, aged 14 and under, for playground-related injuries every year.

Wood chips and pea gravel infill became typical sights at playgrounds. But over the years, recycled tire rubber -- both shredded and ground into round pieces -- has become popular. No official count of playgrounds with recycled tire infill exists, but state grant programs, federal efforts to promote tire infill and effective marketing by manufacturers have made ground rubber one of the most-recommended surfaces on the market today.

Michael Blumenthal, former vice president of the Rubber Manufacturers Association and now an independent consultant for the industry, said that studies have shown tire infill to

have higher impact attenuation than other surfaces, such as pea gravel. "In other words," he said, "It was the safest thing for a kid to fall onto."

Consumers, like town officials in Bandon, like rubber infill for various reasons. In addition to its bounce, tire is cheaper to maintain in the long run, some say, because it doesn't degrade like wood chips or other organic materials.

Some states, in an effort to recycle and repurpose old tires, incentivize the material. Kentucky, one of several states that give grants to municipalities, school districts and other entities to use crumb rubber, has funded 287 rubber-filled playgrounds since its program began in 2004.

The town of Bandon looked "long and hard" at what infill it would choose for the playground, said Michelle Hampton, Bandon's city planner. Federal and independent safety manuals, Hampton added, all point to rubber mulch as a safe surface for playgrounds.

"All of them say the same thing," said Hampton. "This is an appropriate material to be used in a playground."

Parents interviewed in Bandon, Oregon, and others from around the country who wrote to NBC News gave similar testimonies about their young children putting tire in their mouths, and ending up covered in black after playing on playgrounds filled with tire crumb.

Alisa O'Brien, a grandmother and a registered nurse from Ft. Myers, Florida, had the same concerns as other caregivers. "I would pick up my grandson from daycare each afternoon to find his hands and arms up to his elbows covered in black," she said.

According to the EPA, benzene, mercury, styrene-butadiene, polycyclic aromatic hydrocarbons, and arsenic, among several other chemicals, heavy metals and carcinogens, have been found in tires. Studies have found that crumb rubber can emit gases that can be inhaled. When the material gets hot, it can increase the chances that volatile organic compounds, or VOCs, and chemicals can "off-gas," or leach into the air.

A previous investigation by NBC News found that while many studies concluded that the crumb rubber in artificial turf fields did not present acute health risks, they often added the caveat that more research should be conducted.

One study that analyzed rubber mulch and rubber mats, published in the scientific journal Chemosphere in 2013, concluded that "Uses of recycled rubber tires, especially those targeting play areas and other facilities for children, should be a matter of regulatory concern."

When the group of parents approached the town with their research, Hampton said she and other concerned officials also set out to learn more about the rubber. "It was difficult," she said. "There was never one study that's done that says, 'This is absolutely safe, or this

is toxic.' Basically it says, 'There needs to be future studies, but at this particular time, it meets all of the standards necessary for it to be considered safe.'"

### **"What's Low for a Child?"**

Dr. Landrigan, whose research in the 1970s on children exposed to lead by a smelting company, is credited with spurring the widespread regulation of the heavy metal, said that currently available studies on rubber infill are "inadequate."

There is not one study, he said, that attempts to measure the effects that long-term, repeated exposure to tire shreds or ground rubber could have on young children.

While the International Agency for Research on Cancer says that, at low levels of exposure, carcinogenic chemicals are safe, Landrigan said the repeated exposure of children to such carcinogens and chemicals put them at greater risk than adults, even at low levels.

"My concern as a pediatrician when somebody says that the levels are low is to ask the counter-question, 'What's low for a child?' " Landrigan said. "I think for little children who play right down with their faces on the ground, who pick up stuff and put it in their mouths, who get crumb rubber on their skin in ways that adults would almost never get it on their skin, that any level of exposure to a known human carcinogen is too much."

Behavioral traits unique to children, like putting things in their mouths, increase their risk of exposure. They breathe, eat and drink more relative to their body weight than adults. They also have many more years of life in which to develop disease triggered by early exposure to a carcinogen.

"Children's cells and organs are rapidly growing and developing," Landrigan said. "Developmental processes are very complex. They're easily disrupted."

Several substances found in tires are concerning, Landrigan added. "Butadiene is a known human carcinogen," he said. "Styrene is a neuro-toxic chemical. It can cause injury to the brain and nerves. Truck tires also contain other toxic chemicals. All of these chemicals that are part and parcel of the tires get into the crumb, which goes into the field."

Industry representatives and manufacturers say that crumb rubber is safe for children to play on because the manufacturing process binds the various components of tire, including carbon black and solvents, into a "matrix" that makes it impossible for them to leach out.

"Most people look at the raw materials going into tires and say, 'This is a suspected causer of cancer, this could be an endocrine disrupter,' " said Blumenthal, the consultant. But after the manufacturing process, he said, "None of the raw materials that go into a tire are available."

## "We Will Carefully Review Any New Findings"

Coordinated efforts to recycle tires have helped push scrap rubber into playgrounds. In 2003, the EPA launched a "Scrap Tire Workgroup," that gathered together industry representatives, state and EPA officials to advance voluntary efforts to recycle scrap tires. Often discussed by the workgroup was how to promote the use of ground rubber.

One report, issued by the workgroup in 2007, cited various factors that stood in the way of ground rubber's success: toxicological and environmental concerns, as well as ground rubber producers' lack of effective quality controls. It recommended that the EPA take charge of a national effort to promote the material.

But while the EPA has helped coordinate efforts to recycle tires and move crumb rubber onto playgrounds and fields, it has not coordinated efforts to study the material -- even though, years after its one study was published in 2009, the EPA retracted its assurances that crumb rubber artificial turf was safe, calling the study "limited in scope."

The EPA declined to speak to NBC News, but said in a statement that it does not plan to commission further studies because it considers the safety of crumb rubber to be a "state and local issue."

"Our highest priority is protecting public health and the environment, and we will carefully review any new findings or information," said Liz Purchia, press secretary for the EPA.

The Consumer Product Safety Commission also has no plans to create standards for the chemical composition of tire mulch used in playgrounds.

Contractors and municipalities use the CPSC's Public Playground Safety Handbook, also known as the "Bible" of playgrounds, before planning new playgrounds, said Scott Wolfson, spokesperson for the agency. The handbook recommends using tire mulch.

The agency tested crumb rubber turf fields for lead in 2009, but declared that its tests were "limited," and that "The exposure assessment did not include chemicals or other toxic metals, beyond lead."

Since its initial tests, according to the CPSC, the agency has worked with the industry to develop voluntary standards for lead content for artificial turf.

While safety standards regulate the depth and impact attenuation of playground infill, there is only one standard that regulates the chemical makeup of playground equipment and infill. Wood mulch and wood equipment treated with chromated copper arsenic, also known as CCA, are barred from use in playgrounds.

Though the agency spent "nearly two years" creating standards for wood, Wolfson said, it has no plans to act on crumb rubber.

"We are a small agency," Wolfson said. "Our toxicologists already have much on their plate regarding other congressionally-mandated action."

Citing the cost, a lack of definitive research, and support from many other local parents for the playground, Bandon officials recently voted to keep the infill around.

For now, concerned parents like Jennifer Head, who opposed the rubber infill, said they will have to take their kids elsewhere. A nearby elementary school has a playground filled with pea-gravel. The beach, with its beautiful rock formations, is another option.

In the meantime, Head said, parents will have to make their own decisions. As long as rubber infill remains unregulated and unstudied by government agencies, she said, "We have to be independent thinkers. ... If they're not going to do it, then we have to put the dots together ourselves."

First published December 2nd 2014, 4:02 pm

## HANNAH RAPPLEYE

Rappleye is a reporter with the Investigative Unit at NBC News. Previously, her reporting has been supported... [Expand Bio](#)

Liz Purchia  
Press Secretary  
U.S. Environmental Protection Agency  
Direct: 202-564-6691  
Cell: 202-841-2230